Abstract

Today’s world is a Global Village. It has shrunk at such a fast pace that the technologies and businesses are no longer concentrated to only developed countries. On the contrary, they are now a domain of the developing countries. Thus, it is only coherent for developing nations like India need to inculcate this culture in their society. Developed countries believe in accountability. In order to achieve this, they have developed technologies, standards, systems and governing bodies to implement the systems. These systems, viz. ISO, ASME, EN etc. are based on scientifically proven data, are logical and easy to adopt & follow.

This paper relates education, standardization, certification, and accreditation and establishes a logical synchronization, to put up a system, which when enforced, would enable quality excellence and make organizations more accountable and more demanding on quality. This paper aims to set up a system which if implemented, will put up a consolidation, for the otherwise fragmented structure, thereby enabling excellence.

Keywords – Education, Standardization, Certification, Accreditation, Excellence

Introduction

India is a huge country with humongous amount of young potential to be tapped. India has got the youngest population in the world. Youth is a bliss for any economy. However, the potential needs to be tapped. Present youth is qualified, but non-productive. This calls for the need of trade-based education. But, only focusing on trade-based education wouldn’t solve the issue. It should be complimented with competent codes, systems and having a government patronage. We will be discussing education, standardization, certification and accreditation generically and then discuss possible improvements.

Education - Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habit.

Standardization - It is the process of implementing and developing technical standards based on the consensus of different parties that include firms, users, interest groups, standards organizations and governments

Certification - It refers to the confirmation of certain characteristics of an object, person, or organization. This confirmation is often, but not always, provided by some form of external review, education, assessment, or audit.
ISO defines certification as the provision by an independent body of written assurance (a certificate) that the product, service or system in question meets specific requirements.

**Accreditation** – It is a specific organization’s process of certification.

ISO defines accreditation as a formal recognition by an independent body, generally known as an accreditation body that a certification body operates according to international standards.

Education is about acquisition, Standardization is about implementation and development, Certification is about confirmation while Accreditation describes the process of certification.

With this in reference, we analyzed their effects on an organization and thereby, its system. All these factors play a vital role individually and are an important contributing factor to any organization’s growth.

In this paper, we will try to quantify the effects they have on an organization and evaluate the possibilities of improvements.

**Theory**

We are discussing a basic system (Based on ISO Standard) and then relate other systems to it and quantify the position of Education, Standardization, Certification and Accreditation in them. When an organization implements a system like ISO, the organization also establishes that it now has a basic platform which will enable it to undertake its work smoothly. ISO gives a system which is self-sufficient. It asks us to work according to standard operating procedures and ensures a corrective and preventive action in case of any non-conformances. Each and every activity is recorded which can be easily retrieved in future when required.

ISO establishes a logical synchronization between various processes so as to achieve the desired results. It is a process oriented approach and implements a Plan-Do-Check-Act (P-D-C-A) Cycle. It establishes a Quality Management System (QMS) which ensures consistent delivery of products and services that meet the customer and applicable statutory and regulatory requirements and enhances customer satisfaction. The QMS is the heart and soul of ISO. It consolidates all the fragments of management and binds them logically so as to affect the desired outcome. \(^1\)

However, ISO by itself does not certify any organization, nor does it issue any certificates. It merely produces standards, on the basis of which certifications are issued. Certification body is a distinct body, other than ISO. This certification body need not be ‘accredited’ and also that non-accreditation does not necessarily mean it is not reputable, but it (accreditation) does provide independent confirmation of competence. Accreditation assures users of the competence and impartiality of the body accredited. \(^3\) For example, in India, National Accreditation Board for Certification Bodies (NABCB) is a body to give accreditation to various certification bodies. These certification bodies, in turn, offer certification to various organizations.
Certification establishes the organization’s competency. It can be a useful tool to add credibility, by demonstrating that a product or service meets the expectations of the customers. For some industries, certification is a legal or contractual requirement. However, certification is not the first step. Although it establishes the competency, it is essential to have a platform to establish this competency. This platform is ‘education’. The organization needs to be educated about the system. Education orients the human brain to comprehend various aspects of the system and develops a perspective which aids in successful implementation of the system. This is achieved by administering focused training by ‘qualified’ and ‘certified’ personnel, from an ‘accredited’ agency.

Thus, we land up to a hierarchy to implement a system. The hierarchy being –

1. Education
2. Accreditation
3. Certification
4. Standardization

Education


a. Why?
   Personnel need to be educated for the need to establish the system. The basic need is to have a thorough account of all the activities of the organization and arrange the resources accordingly. The organization imbibes in itself the culture of streamlining its operations and manages the turbulences & irregularities. Hiccups, surprises and unplanned happenings cannot be completely avoided. An effective system not only arranges for streamlined operations, but also takes care of any hiccups and irregularities. The organization ‘knows’ its capability and weakness and acts accordingly. The customer, too, gets a confidence regarding the functioning of the organization and is convinced for the desired output.

b. What?
   Educating about this question answers the personnel all the technical questions regarding the system. It establishes the clarity in thought which aids in successful implementation. But, there will be some hiccups in implementation. These are covered by the next question – How?

c. How?
   This question takes care of the hiccups and irregularities in the implementation process. It is presumed that there will be some errors and unforeseen circumstances. These are addressed by educating the personnel regarding the implementation of the system. Most important aspect to be covered is the risk assessment and contingency planning part of the system, where potential risks and ‘damages’ are covered.

d. When?
   Time is the essence. It’s important to set a time-frame for the implementation of the system. The time required should not be too long or too short, just right enough to comprehend and implement the system. Too long time would pull out the ‘taut’-ness of the
system, on the other hand, too short time will cause the implementation to crumble down. Time needed to understand the system could be more and based on that, time required to implement could be planned.

e. Where?
This gives the location, place and scope of the system application. The system could be applied to all the branches of the company or only one specific branch. Also, some departments could be left off, while others could be included. Some aspects of the system could be not relevant to the organization due to its business scope. Personnel should be aware regarding the quantity of work they need to do by knowing about the scope of work. Educating about this aspect helps the personnel to focus on the area of interest. Answer to this question brings about further clarity of the scope of the system.

Accreditation

Accreditation is the confidence that a particular certifying agency is in conformance with all the aspects of standardization and certification. An accreditation body comprises of members from industry and government. The accreditation body gives an accreditation to a third party certifying agency to offer certifications to industry. It’s not mandatory for the Certifying Body (CB) to be accredited. However, accreditation develops a sense of confidence in the client (industry). The client is assured about the methodology and also the quality of services received.

Accreditation is a result of conformity assessment. Conformity assessment is defined as any activity concerned with determining directly or indirectly that relevant requirements are fulfilled. A standard is a technical expression of how to make a product safe, efficient, and compatible with others. But standards are just good ideas unless products, processes, systems and personnel conform to them. Conformity assessment provides assurance to consumers by increasing consumer confidence when personnel, products, systems, processes or services are evaluated against the requirements of a voluntary standard.²

Accreditation denotes both a status and process. As a status it denotes conformity to a specific standard as set forth by an accrediting agency and as a process it shows a commitment to continuous improvement. Accreditation means that the certification body meets the requirements of a national or an international standard as assessed by an accrediting agency. Certification of products, personnel, or management systems like ISO 9001 or ISO 14001 demonstrates conformity to the requirements of a standard. Accreditation is the procedure by which an authoritative body gives formal recognition that a body or person is competent to carry out specific tasks. Both accreditation and certification use criteria and procedures to implement such activities. Definition of these terms is given in ISO Guide 2 may provide more clarification -

- Para 12.11 Accreditation: Procedure by which an authoritative body gives formal recognition that a body or person is competent to carry out specific tasks.
- Para 15.1.2 Certification: Procedure by which a third party gives written assurance that a product, process or service conforms to specified requirements²
The scope of the accreditation is determined by the standard to which the certification body is accredited. In general, the accreditation standard covers aspects of governance, disclosure, fairness to candidates, non-discrimination, and disclosure. \cite{2}

Thus, to conclude, accreditation provides an assurance of the competence, impartiality and integrity of conformity assessment bodies.

**Certification**

ISO develops standards. It does not certify any organization. Certification is performed by a Certification Body (CB) which assesses the organization to be certified and gives certification based on the ISO standard after successful compliance with the standard norms. As previously discussed in accreditation, certification is defined as a procedure by which a third party gives written assurance that a product, process or service conforms to specified requirements. Certification is the final conformance to the client which establishes that the client is now capable to comply all the requirements of the standard against which certification is granted. It means that the system of the organization is in coherence with the standard and at par with other similar certified organizations. \cite{3}

**Standardization**

Standardization is an aspect which is ‘achieved’. It’s the end result. An organization is said to be standardized when it successfully conforms itself to a particular system certification. Standardization is a common language. It establishes the coherency of the organization with that of the globally accepted parameters. Standardization ensures that the practices followed by the organization are at par with the corresponding global practices. This is helpful for the organization to communicate with its clients in a mutually understood language. It brings the organization on a common working platform and eases the cross-organizational business operations. Simplest example can be of a nut and bolt or a shaft and hole assembly.

**Suggested Improvements**

Currently, in India, we have AICTE, IE(I), etc. which offer technical and trade-based courses. IE(I) issues Chartered Engineer certificates and the user, thus becomes bound by law. National Vocational Education Qualification Framework (NVEQF), proposed in 2012, is one commendable step to enhance the technical skills.

However, there is no any legal obligation at grass-root level, i.e., at the technician level. We propose to integrate Education, Accreditation, Certification and Standardization into a framework, similar to that of ASME and similar organizations. Certificates having expiry dates will prove to be a major motivation for skill-excellency. NVEQF has proposed levels in vocational education and works for the social acceptance of vocational courses. India is currently performing well in the service sector. But, manufacturing sector is of a notch-higher importance. Having renewable certifications in
vocational discipline could be one step to enable us to produce internationally acceptable goods/products “Made in India” and also reduce the unemployment rate.

Creation of harmonized Codes which are at par with international norms is another such step which could be undertaken. These codes could be updated, reviewed by the concerned council from time to time. Since, we have stalwart organizations like Institution of Engineers (India) this is possible to a higher precision.

All the systems we have now are voluntary. If given a legal base like IBR, ‘excellency’ in all walks of industry could be achieved.

Conclusion

The synchronization between Education, Accreditation, Certification and Standardization is not novel. However, it needs to be pronounced today to clear the misunderstandings about any system by strengthening the basics. The industrial environment is ever changing and particularly in this era, the changes occur at a faster pace. To adapt to them and maintain a competitive edge in the market, an organization needs to have a smooth system, devoid any bumps.

This subject requires a continual work and its study is never ending. There is always a scope for improvement. If implemented meticulously, not only our industrial fraternity, but the entire social system can be improved.

References

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